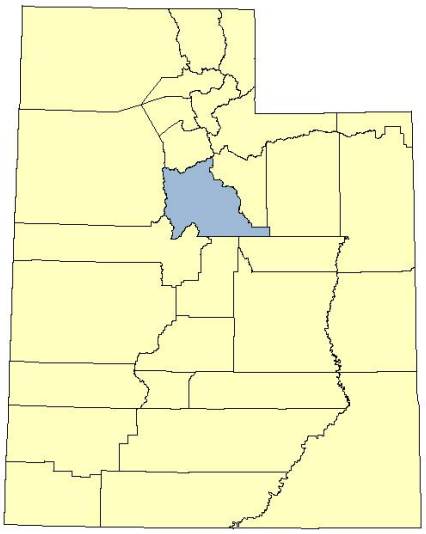
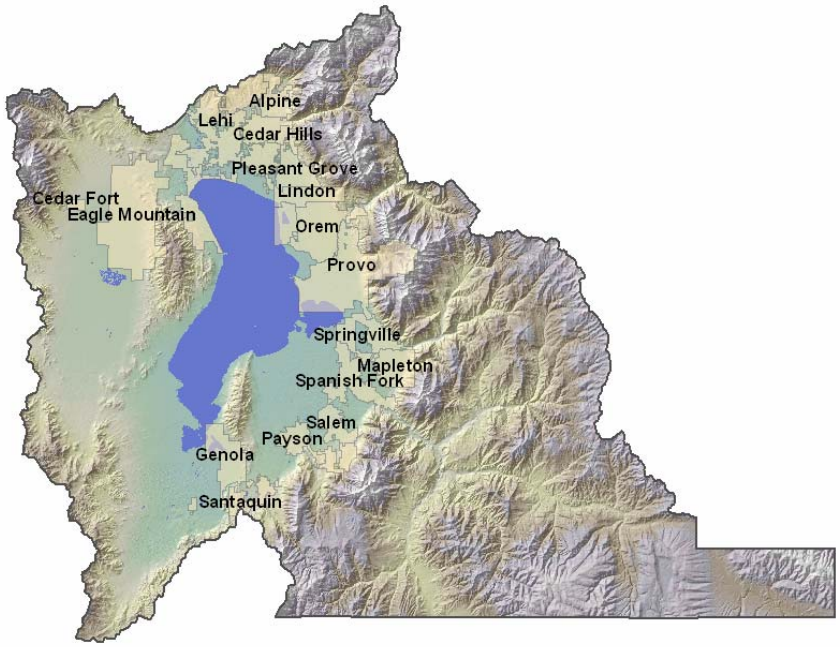
This resource assessment is designed to gather and display information specific to Utah County, Utah. This report will highlight the natural and social resources present in the county, detail specific concerns, and be used to aid in resource planning and target conservation assistance needs. This document is dynamic and will be updated as additional information is available through a multi-agency partnership effort. The general observations and summaries are listed first, followed by the specific resource inventories.

Contents





Introduction

Utah County is located in central Utah about 44 miles south of the Salt Lake metropolitan area. It is a diverse area with everything from urbanized areas to wide open spaces. Utah County is replete with numerous cultural, retail, commercial, entertainment and recreational opportunities within its varying land areas.

Utah County consists of 2,143.5 square miles and has the second largest population of all the counties in Utah. Utah Lake covers an average of 132.6 square miles. Elevation in the county varies from 11,928 feet at the highest point on Mt. Nebo to the low point at 4,480 feet on the Jordan River Flood Plain.

Average low winter temperatures: 14 degrees; average high summer temperatures: 92 degrees; average precipitation: 14.2 inches.

General Land Use Observations

Grass / Pasture / Hay Lands

- Complications related to overgrazing include poor pasture condition, soil compaction and water quality issues.
- Control of noxious and invasive plants is an ever increasing problem.
- The small, part-time farms are less likely to adopt conservation due to cost and low farm income.

Rangeland

- Improper livestock grazing, drought, and other practices have caused a decline in the diversity of rangeland cover and vegetation.
- Continued increase and spread of sagebrush and other woody species has decreased the usefulness of some areas as grazing land.
- Brush and pest management will be necessary in many areas to control

Row & Perennial (orchards / vineyards / nurseries) Crops

- Residue, nutrient and pest management are needed to control erosion and to protect water quality.
- The small, part-time farms are less likely to adopt conservation due to cost and low farm income.
- The number of vineyards and orchards are declining due to development.

Forest

- Forested land is mostly Federal land owned by the Forest Service or the BLM.
- Control of noxious and invasive plants, disease, and insect infestation are an increasing problem.

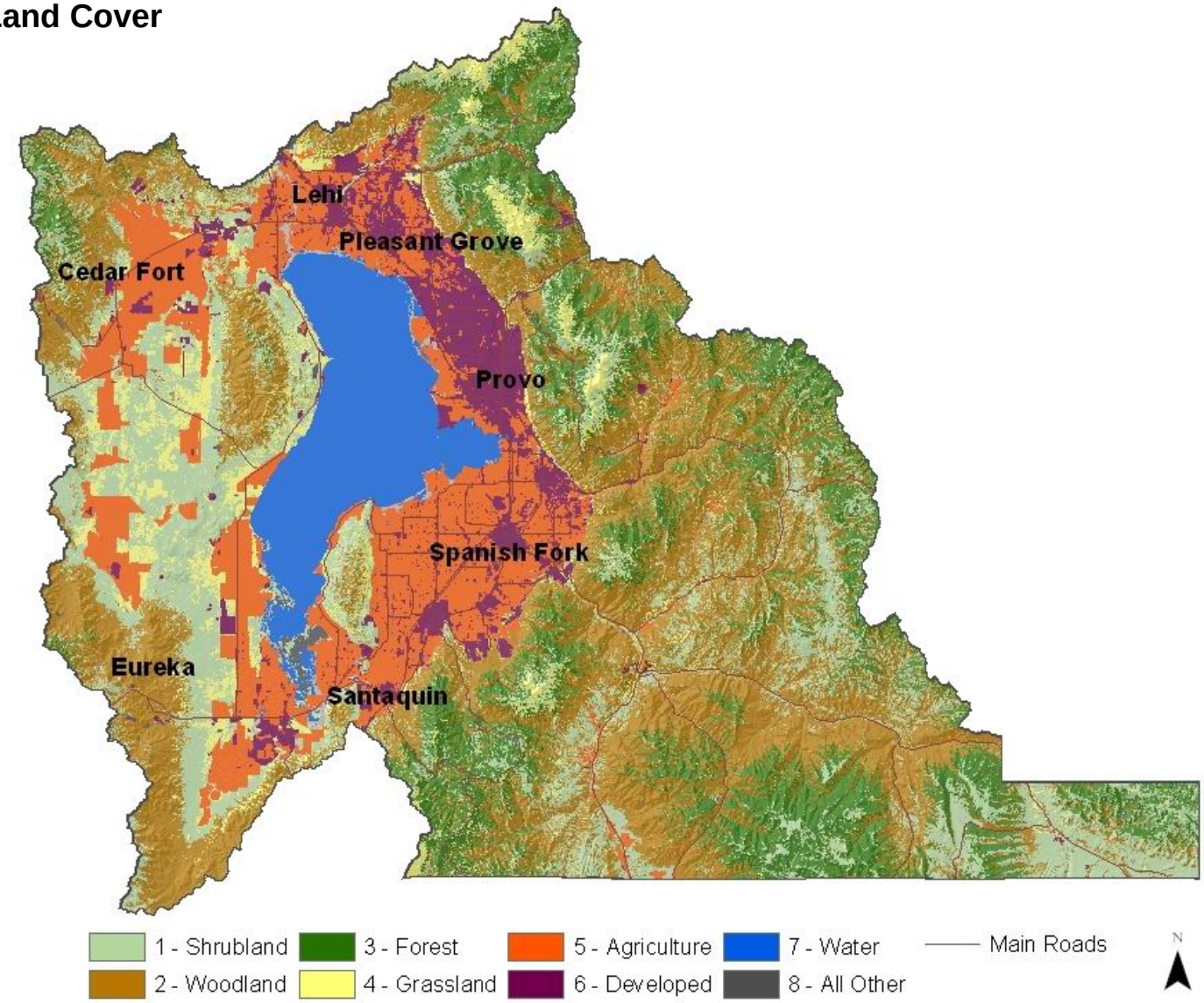
Stream/ Riparian Areas

- Considerable stream bank instability and erosion due to overgrazing of riparian areas and loss of vegetation to hold banks in place.
- Residue and nutrient management are needed to maintain healthy streams and riparian areas.

Resource Assessment Summary

Categories	Concern high, medium, or low	Description and Specific Location (quantify where possible)
Soil	high	Erosion on grazed lands is foremost. Some cropland needs protection
Water Quantity	high	Efficient use of irrigation water on all cropland, hayland, and pastures
Water Quality Ground Water	low	
Water Quality Surface Water	high	Nutrients from animal feedlots and municipalities. Turbidity and salts in water course.
Air Quality	medium	Cedar Valley and disturbed urban sites are of great concern for dust and wind erosion.
Plant Suitability	high	Invasive plants throughout the county
Plant Condition	high	Noxious weeds throughout the county
Fish and Wildlife	high	Wintering range for big game. Inadequate habitat for the June Sucker.
Domestic Animals	low	adequate livestock water
Social and Economic	high	Urban Encroachment on Agricultural Land along the Wasatch front, Eagle Mountain, Lehi, and southern Utah county

Land Cover



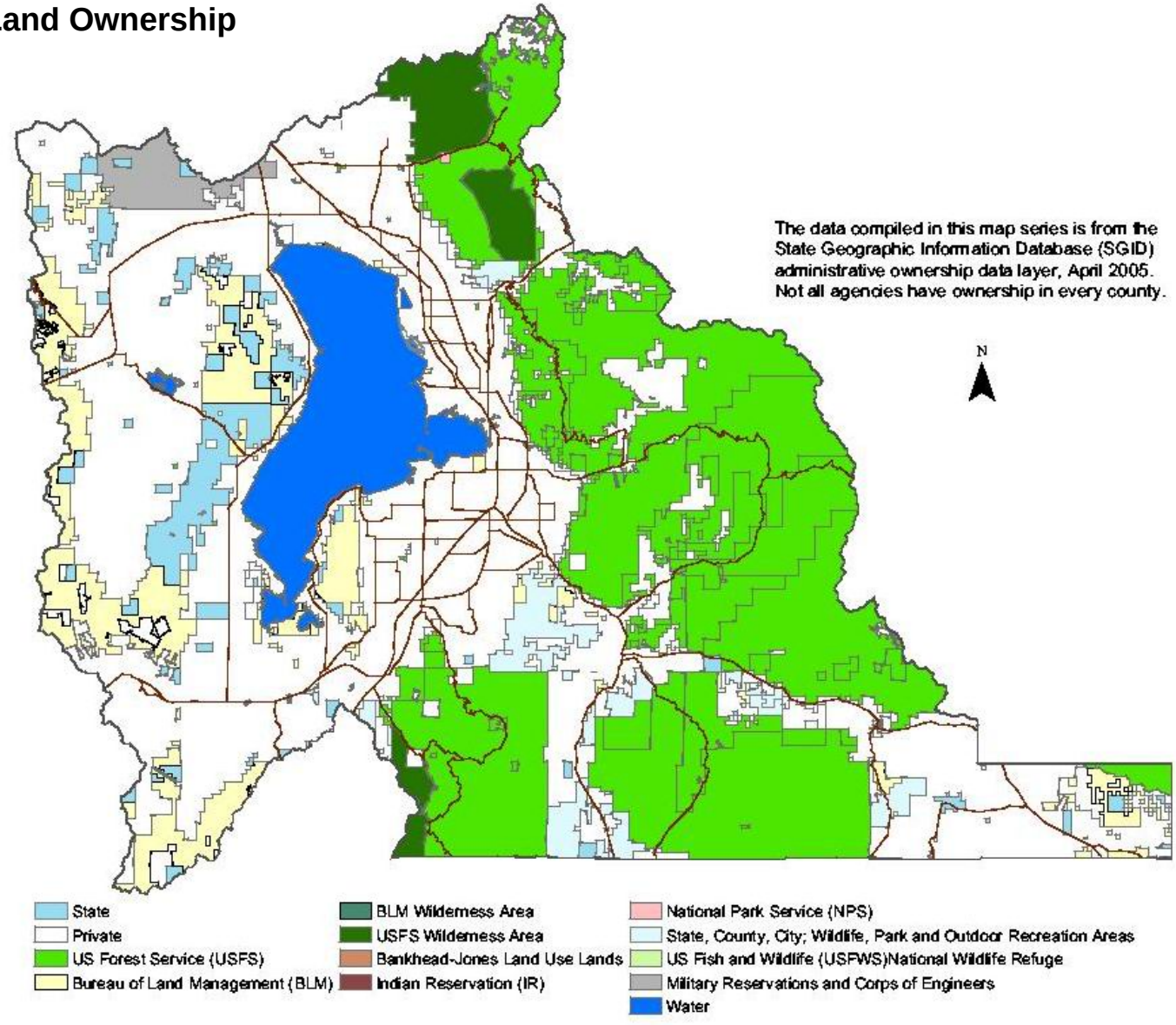
Land Cover/Land Use	Acres	%
Forest	479,653	35%
Grain Crops	31,706	2%
Conservation Reserve Program *a	6,641	0%
Grass/Pasture/Haylands	224,516	16%
Orchards/Vineyards	5,522	0%
Row Crops	395	0%
Water	91,801	7%
Wetlands	8,266	1%
Shrub/Rangelands	274,281	20%
Developed	199,474	15%
Utah County Totals *b	1,371,406	96%

**a : Estimate from Farm Service Agency records and include CRP/CREP. *b : Totals may not add due to rounding and small unknown acreages.*

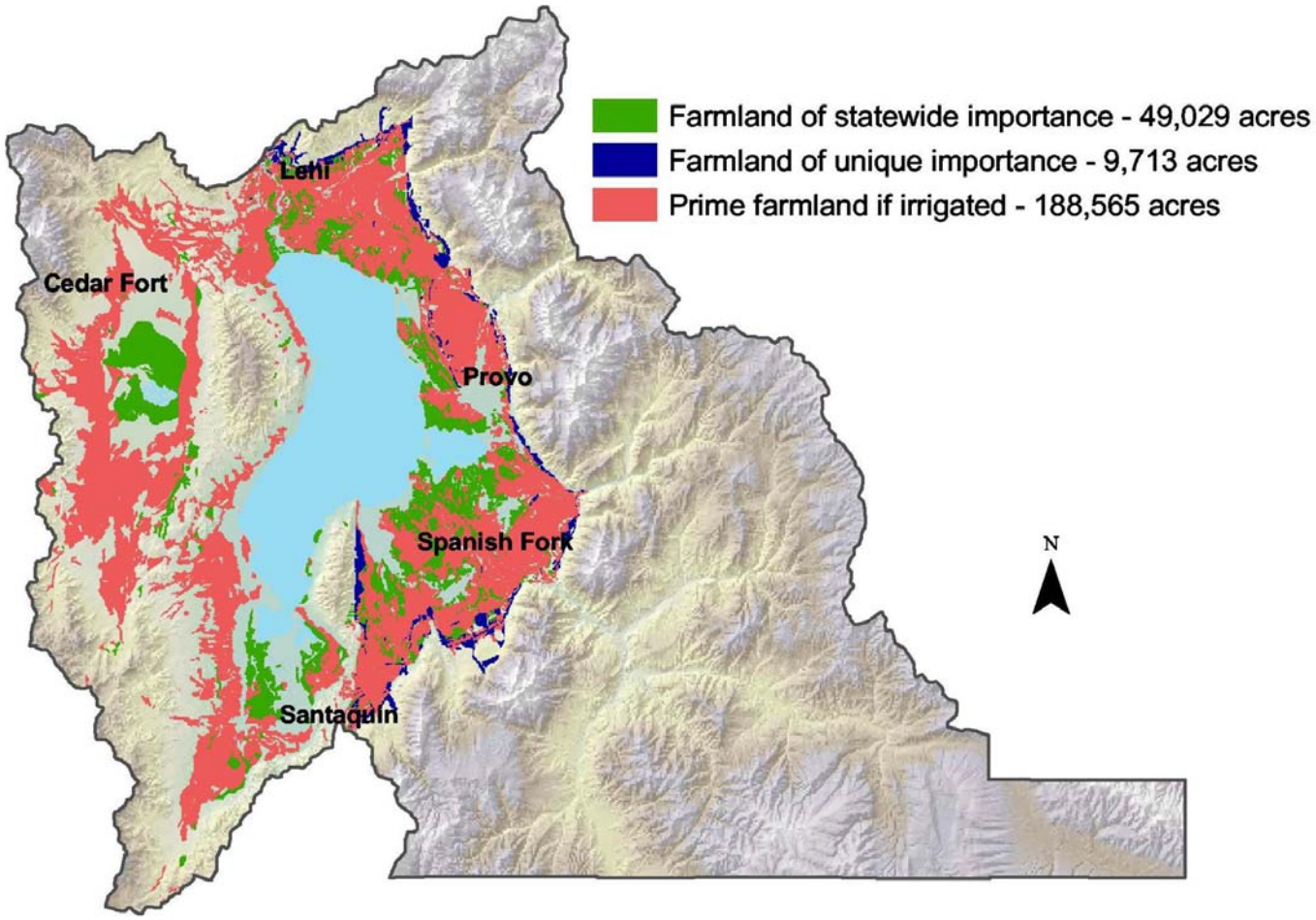
Special Considerations for Utah County:

- Thirty-five percent of land is owned by the Forest Service.
- Eight percent of the land is owned by the BLM.
- Orchards produce perennial fruit crops such as apricots, sweet cherries, and pears.
- Grass/Pasture/Hay includes approximately:
  - 224,516 acres of pasture of all types.
  - 42,672 acres of hay.
- Row crops include a variety of field and vegetable crops grown for the cannery processing and fresh market.
- There are approximately 31,706 acres of grain grown yearly.
- Shrub/rangelands consist of pinyon-juniper, mountain big sagebrush-grass, aspen, and other areas.
- Fifteen percent of the county consists of urban land uses within metropolitan areas.

Land Ownership



Prime & Unique Farm Land



Prime farmland

Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion

Unique farmland

Land other than prime farmland that is used for the production of specific high-value food and fiber crops...such as, citrus, tree nuts, olives, cranberries, fruits, and vegetables

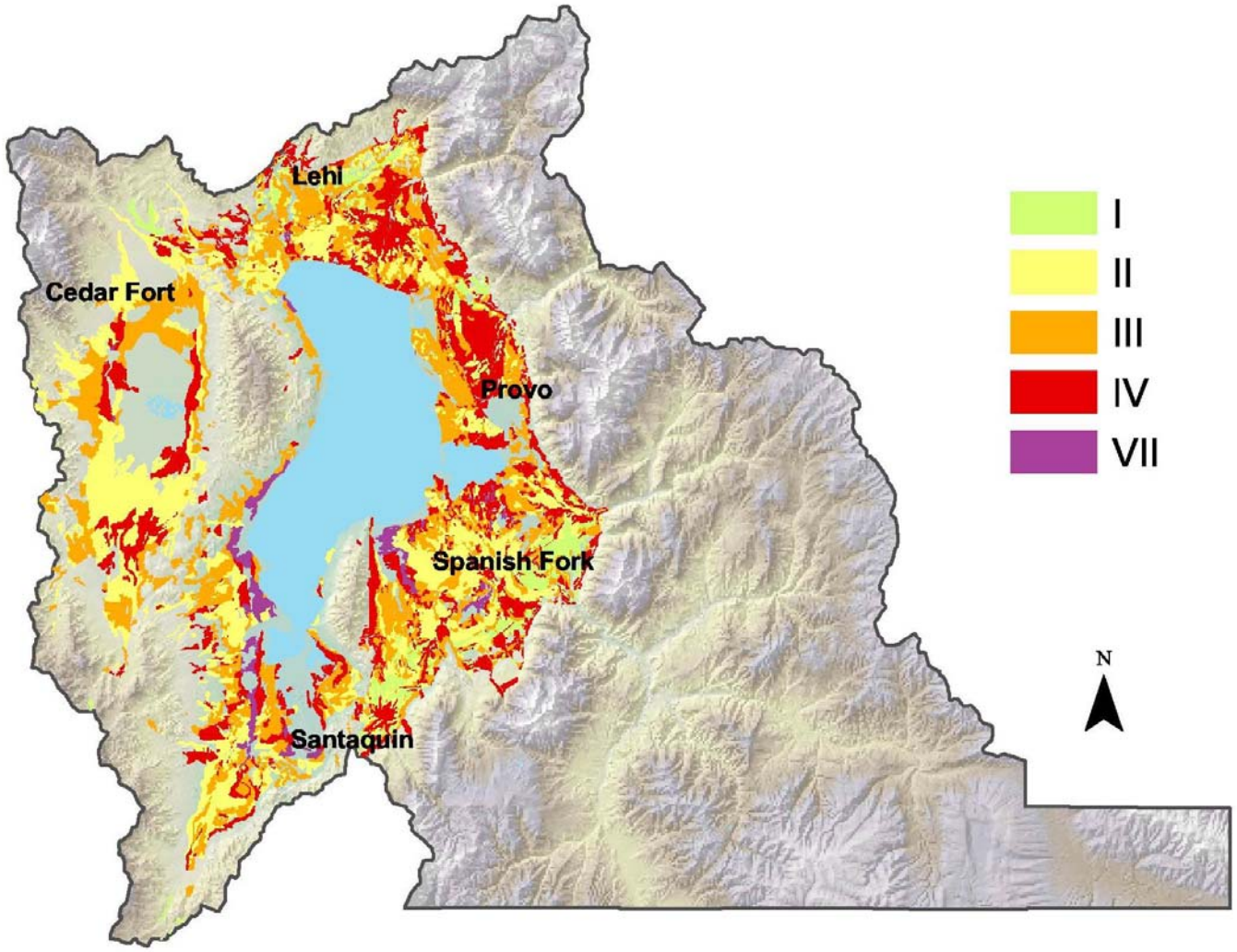
Additional farmland of statewide or local importance

Land identified by state or local agencies for agricultural use, but not of national significance

Resource Concerns – SOILS

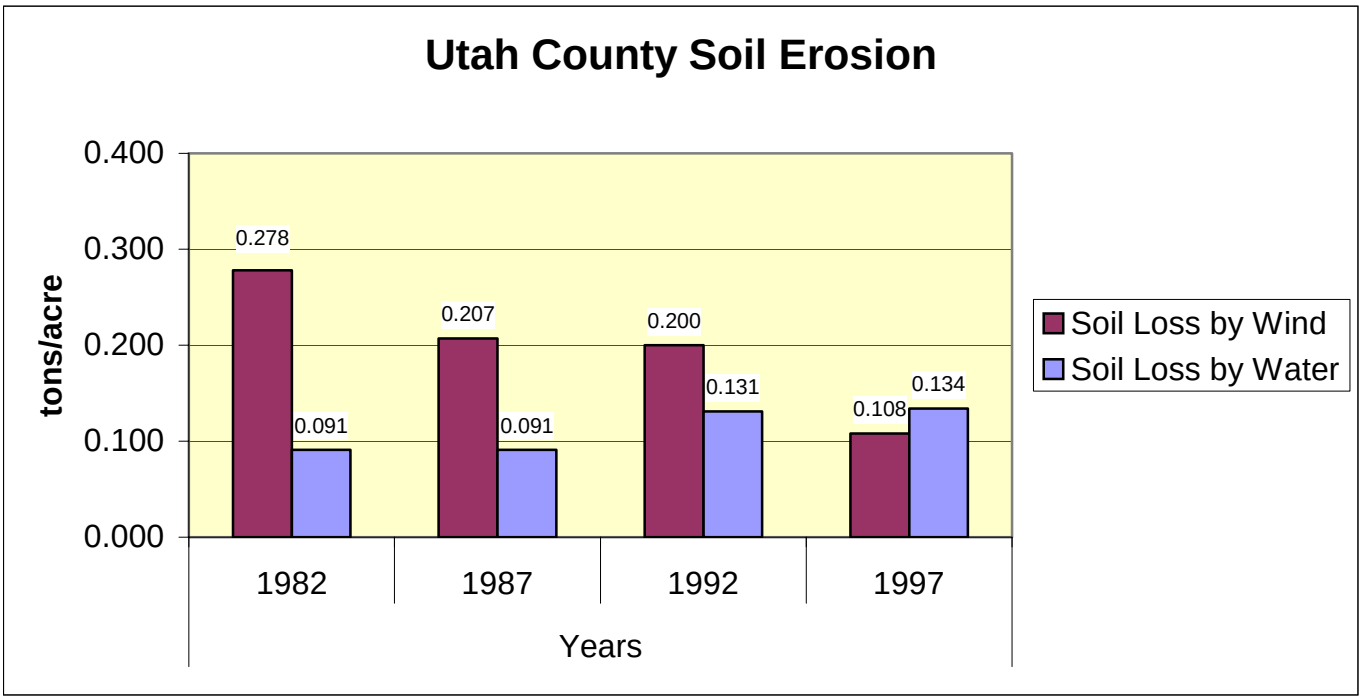
Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Soil Erosion	Sheet and Rill	X			X	X			X			X				
	Wind	X										X				
	Ephemeral Gully	X							X			X				
	Classic Gully				X	X			X	X						
	Streambank				X	X		X	X	X						
	Shoreline															
	Irrigation-induced															
	Mass Movement							X	X	X		X	X			
	Road, roadsides and Construction Sites								X	X		X				
Soil Condition	Organic Matter Depletion	X			X	X										
	Rangeland Site Stability				X	X										
	Compaction				X	X					X	X				
	Subsidence															
	ContaminantsSalts and Other Chemicals	X	X	X												
	Contaminants: Animal Waste and Other OrganicsN	X							X							
	Contaminants: Animal Waste and Other OrganicsP	X							X							
	Contaminants: Animal Waste and Other OrganicsK															
	Contaminants : Commercial FertilizerN															
	Contaminants : Commercial FertilizerP															
	Contaminants : Commercial FertilizerK															
	ContaminantsResidual Pesticides															
	Damage from Sediment Deposition	X	X	X					X					X		

Land Capability Class on Cropland and Pastureland



		Acres	Percentage
Land Capability Class (Irrigated Cropland & Pastureland Only)	**I** - slight limitations	14,914	6%
	II - moderate limitations	87,218	34%
	III - severe limitations	83,704	32%
	IV - very severe limitations	65,328	25%
	V - no erosion hazard, but other limitations	0	0%
	VI - severe limitations, unsuited for cultivation, limited to pasture, range, forest	0	0%
	VII - very severe limitations, unsuited for cultivation, limited to grazing, forest, wildlife	7,610	3%
	VIII - misc areas have limitations, limited to recreation, wildlife, and water supply	0	0%

Soil Erosion

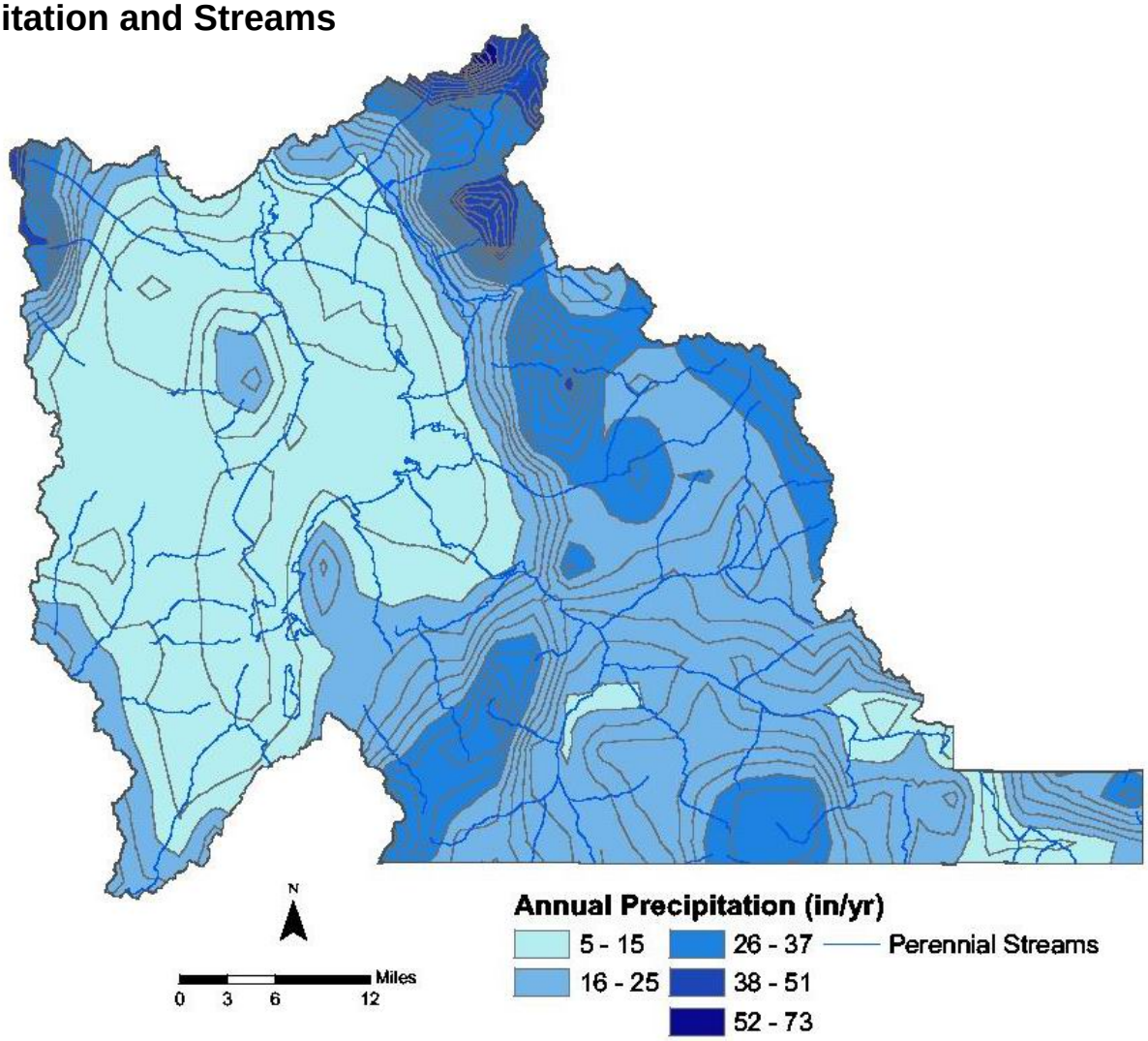


- Sheet and rill erosion by water on the sub-basin croplands and pasturelands have nearly stabilized with an increase of less than .1 tons of soil per year per acre from 1982 to 1997.
- Wind erosion has declined by .15 tons of soil per year per acre from 1982 to 1997.
- Controlling erosion not only sustains the long-term productivity of the land, but also affects the amount of soil, pesticides, fertilizer, and other substances that move into the nation's waters.

Resource Concerns – WATER

Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Water Quantity	Water Quantity – Rangeland Hydrologic Cycle				X	X			X							
	Excessive Seepage															
	Excessive Runoff, Flooding, or Ponding	X	X						X			X				
	Excessive Subsurface Water											X				
	Drifted Snow															
	Inadequate Outlets															
	Inefficient Water Use on Irrigated Land	X	X	X												
	Inefficient Water Use on Non-irrigated Land															
	Reduced Capacity of Conveyances by Sediment Deposition								X					X		
	Reduced Storage of Water Bodies by Sediment Accumulation								X					X		
	Aquifer Overdraft								X					X		
	Insufficient Flows in Watercourses								X					X		
Water Quality, Groundwater	Harmful Levels of Pesticides in Groundwater															
	Excessive Nutrients and Organics in Groundwater															
	Excessive Salinity in Groundwater															X
	Harmful Levels of Heavy Metals in Groundwater															
	Harmful Levels of Pathogens in Groundwater															
	Harmful Levels of Petroleum in Groundwater															
Water Quality, Surface	Harmful Levels of Pesticides in Surface Water															
	Excessive Nutrients and Organics in Surface Water	X	X	X					X							
	Excessive Suspended Sediment and Turbidity in Surface Water				X	X			X					X		
	Excessive Salinity in Surface Water	X												X		
	Water Quality – Colorado River Excessive Salinity															
	Harmful Levels of Heavy Metals in Surface Water															
	Harmful Temperatures of Surface Water															
	Harmful Levels of Pathogens in Surface Water															
	Harmful Levels of Petroleum in Surface Water															

Precipitation and Streams



	Irrigation Efficiency:	<40%	40 - 60%	>60%
Percentage of Total Acreage	Cropland	30%	30%	40%
	Pastureland	95%	0%	5%

		ACRES	ACRE-FEET
Irrigated Adjudicated Water Rights	Surface	**	**
	Well	**	**
	Total Irrigated Adjudicated Water Rights	0.00	0.00
Stream Flow Data	USGS 09312600 White R Nr Soldier Summit	Avg. Annual Yield	19,429
	USGS 09312700 Beaver Creek Nr Soldier Summit	Avg. Annual Yield	3,380
	USGS 10148200 Tie Fork Nr Soldier Summit	Avg. Annual Yield	4,048
	USGS 10148500 Spanish Fork at Thistle	Avg. Annual Yield	64,487
	USGS 10148510 Spanish Fork Blw Halls Falls	Avg. Annual Yield	87,835
	USGS 10149000 Sixth Water Crk Nr Springville	Avg. Annual Yield	18,389
	USGS 10149500 Diamond Fork Blw Red Hollow	Avg. Annual Yield	88,146
	USGS 10150500 Spanish Fork at Castilla	Avg. Annual Yield	183,965
	USGS 10152000 Spanish Fork Nr Lake Shore	Avg. Annual Yield	74,175
	USGS 10152500 Hobble Cr Nr Springville	Avg. Annual Yield	33,022
	USGS 10161500 South Fork Provo R at Vivian Park	Avg. Annual Yield	19,920
	USGS 10163000 Provo River at Provo	Avg. Annual Yield	282,610
	USGS 10164500 American Fk R Nr American Fk	Avg. Annual Yield	41,344
	USGS 10166430 West Canyon Cr Nr Cedar Fort	Avg. Annual Yield	2,475
	**Information not found		
		MILES	PERCENT
Stream Data	Total Miles - Major (100K Hydro **GIS Layer)**		n/a
	303d (DEQ Water Quality Limited Streams)		#DIV/0!

****Only streams with fairly complete stream flow data are included.**

Watersheds & Total Maximum Daily Load (TMDL)

Watershed Projects, Plans, Studies and Assessments			
NRCS Watershed Projects		**NRCS Watershed Plans, Studies & Assessments**	
Name	**Status**	**Name**	**Status**
West Canyon	Planning stages for a	**Spanish Fork River**	CRMP completed
	Coordinated Resource	**Spanish Fork City River**	Planning stage, estimated
	Management Plan (CRMP)	**Bottoms Area**	completion Dec. 05
DEQ TMDL's		**NRCS Comprehensive Nutrient Management Plans**	
Name	**Status**	**Number**	**Status**
Spanish Fork River	TMDL for Thistle Creek	25	Planned
	& Soldier Creek Draft for	12	Implemented
	Review with DEQ		

AFO/CAFO

Animal Feeding Operations (AFO)					
Animal Type	**Dairy**	**Feed Lot (Cattle)**	**Horses**	**Mink**	**Other**
No. of Farms	22	67	29	12	7
No. of Animal Units	5,160	14,800	12,473	652	5,821

Potential Confined Animal Feeding Operations (PCAFO)				
Animal Type	**Dairy**	**Feed Lot (Cattle)**	**Horses**	**Other**
No. of Farms	4	12	7	2
No. of Animal Units	1,475	558	109.5	50

Confined Animal Feeding Operations - Utah CAFO Permit				
Animal Type	**Dairy**	**Feed Lot (Cattle)**	**Horses**	**Chickens**
No. of Permitted Farms	2	1	0	1
No. of Permitted Animal Units	N/A	N/A	0	18,600

Resource Concerns – AIR, PLANTS, ANIMALS

Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Air Quality	Particulate matter less than 10 micrometers in diameter (PM 10)	X										X				
	Particulate matter less than 2.5 micrometers in diameter (PM 2.5)	X										X				
	Excessive Ozone															
	Excessive Greenhouse Gas: CO2 (carbon dioxide)															
	Excessive Greenhouse Gas: N2O (nitrous oxide)															
	Excessive Greenhouse Gas: CH4 (methane)															
	Ammonia (NH3)										X					
	Chemical Drift															
	Objectionable Odors										X	X		X		
	Reduced Visibility															
	Undesirable Air Movement															
	Adverse Air Temperature															
Plant Suitability	Plants not adapted or suited	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Plant Condition	Plant Condition – Productivity, Health and Vigor	X	X	X	X	X	X	X	X	X			X			
	Threatened or Endangered Plant Species: Plant Species Listed or Proposed for Listing under the Endangered Species Act							X		X			X			
	Threatened or Endangered Plant Species: Declining Species, Species of Concern							X		X			X			
	Noxious and Invasive Plants	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Forage Quality and Palatability			X	X	X	X	X		X						
	Plant Condition – Wildfire Hazard			X	X	X	X	X	X	X			X			X
Fish and Wildlife	Inadequate Food	X	X	X	X	X	X	X	X	X		X				X
	Inadequate Cover/Shelter							X	X	X		X				
	Inadequate Water (Provo River)							X						X		X
	Inadequate Space							X	X	X		X				
	Habitat Fragmentation											X				
	Imbalance Among and Within Populations															
	Threatened and Endangered Species: Species Listed or Proposed for Listing under the Endangered Species Act													X		
Domestic Animals	Inadequate Quantities and Quality of Feed and Forage		X	X	X	X										
	Inadequate Shelter															
	Inadequate Stock Water				X	X			X							
	Stress and Mortality															

Noxious Weeds

Utah Noxious Weed List

The following weeds are officially designated and published as noxious for the State of Utah, as per the authority vested in the Commissioner of Agriculture under Section 4-17-3, Utah Noxious Weed Act:

- Bermudagrass** (cynodon dactylon)
- Canada thistle (cirsium arvense)
- Diffuse knapweed (centaurea diffusa)
- Dyers woad (isatis tinctoria L)
- Field bindweed (Wild Morning Glory) (convolvulus arvensis)
- Hoary cress (cardaria drabe)
- Johnsongrass (sorghum halepense)
- Leafy spurge (euphorbia esula)
- Medusahead (taeniatherum caput-medusae)
- Musk thistle (carduus mutans)
- Perennial pepperweed (lepidium latifolium)
- Perennial sorghum (sorghum halepense L & sorghum almum)
- Purple loosestrife (lythrum salicaria L.)
- Quackgrass (agropyron repens)
- Russian knapweed (centaurea repens)
- Scotch thistle (onopordum acanthium)
- Spotted knapweed (centaurea maculosa)
- Squarrose knapweed (centaurea squarrosa)
- Yellow starthistle (centaurea solstitialis)

There are no additional noxious weeds declared by Utah County (2003).

Wildlife Species of Greatest Conservation Need

The Utah Comprehensive Wildlife Conservation Strategy (CWCS) prioritizes native animal species according to conservation need. At-risk and declining species in need of conservation were identified by examining species biology and life history, populations, distribution, and threats. The following table lists species of greatest conservation concern in the county.

AT-RISK SPECIES				
	Common Name	**Group**	**Primary Habitat**	**Secondary Habitat**
FEDERALLY-LISTED				
Endangered:	June Sucker	Fish	Water - Lentic	Water - Lotic
	Desert Valvata (extirpated)	Mollusk	Water - Lentic	
Threatened:	Bald Eagle	Bird	Lowland Riparian	Agriculture
	Brown (Grizzly) Bear (extirpated)	Mammal	Mixed Conifer	Mountain Shrub
	Canada Lynx	Mammal	Sub-Alpine Conifer	Lodgepole Pine
Candidate:	Yellow-billed Cuckoo	Bird	Lowland Riparian	Agriculture
Proposed:	(None)			
STATE SENSITIVE				
Conservation Agreement Species:	Columbia Spotted Frog	Amphibian	Wetland	Wet Meadow
	Northern Goshawk	Bird	Mixed Conifer	Aspen
	Bluehead Sucker	Fish	Water - Lotic	Mountain Riparian
	Colorado River Cutthroat Trout	Fish	Water - Lotic	Mountain Riparian
	Bonneville Cutthroat Trout	Fish	Water - Lotic	Mountain Riparian
	Roundtail Chub	Fish	Water - Lotic	
	Flannelmouth Sucker	Fish	Water - Lotic	
	Least Chub	Fish	Water - Lentic	Wetland
Species of Concern:	American White Pelican	Bird	Water - Lentic	Wetland
	Black Swift	Bird	Lowland Riparian	Cliff
	Bobolink	Bird	Wet Meadow	Agriculture
	Burrowing Owl	Bird	High Desert Scrub	Grassland
	California Floater	Mollusk	Water - Lotic	Water - Lentic
	Eureka Mountainsnail	Mollusk	Mountain Shrub	Rock
	Ferruginous Hawk	Bird	Pinyon-Juniper	Shrubsteppe
	Fringed Myotis	Mammal	Northern Oak	Pinyon-Juniper
	Greater Sage-grouse	Bird	Shrubsteppe	
	Kit Fox	Mammal	High Desert Scrub	
	Lewis's Woodpecker	Bird	Ponderosa Pine	Lowland Riparian
	Long-billed Curlew	Bird	Grassland	Agriculture
	Pygmy Rabbit	Mammal	Shrubsteppe	
	Short-eared Owl	Bird	Wetland	Grassland
	Smooth Greensnake	Reptile	Mountain Riparian	Wet Meadow
	Southern Bonneville Pyrg	Mollusk	Wetland	
	Spotted Bat	Mammal	Low Desert Scrub	Cliff
	Three-toed Woodpecker	Bird	Sub-Alpine Conifer	Lodgepole Pine
	Townsend's Big-eared Bat	Mammal	Pinyon-Juniper	Mountain Shrub
	Utah Physa	Mollusk	Wetland	
	Western Red Bat	Mammal	Lowland Riparian	
	Western Toad	Amphibian	Wetland	Mountain Riparian

*Definitions of habitat categories can be found in the Utah Comprehensive Wildlife Conservation Strategy.

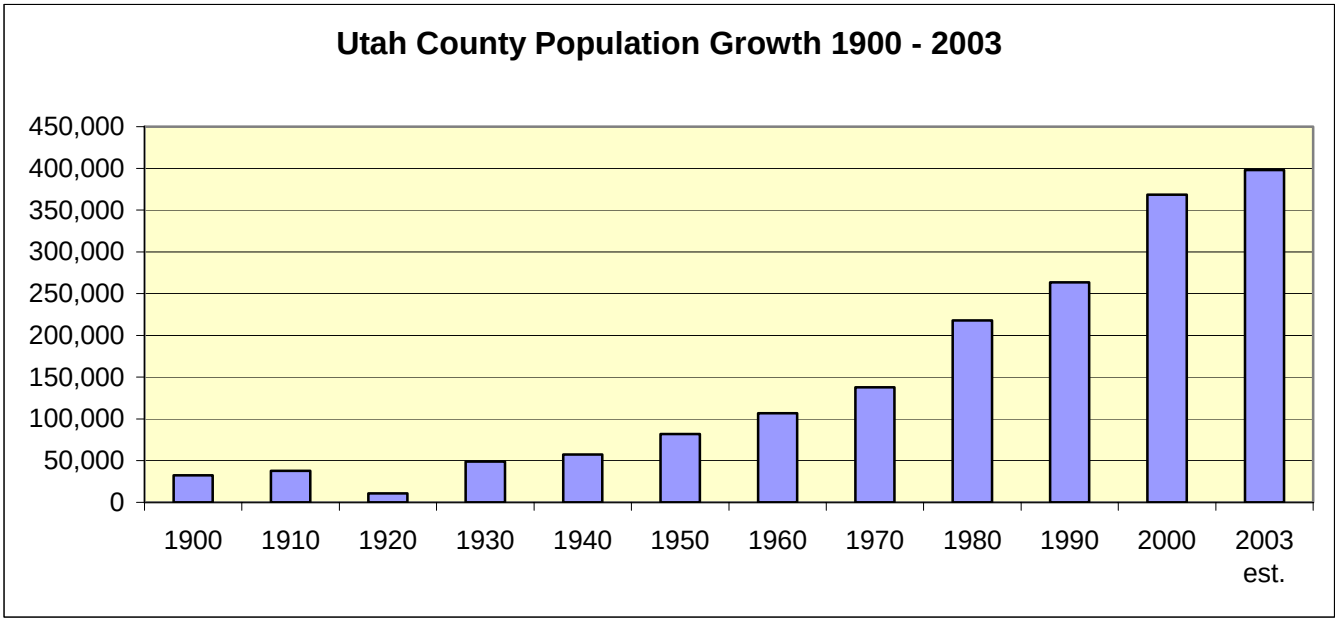
The Utah CWCS also prioritizes habitat categories based on several criteria important to the species of greatest conservation need. The top ten key habitats state-wide are (in order of priority):

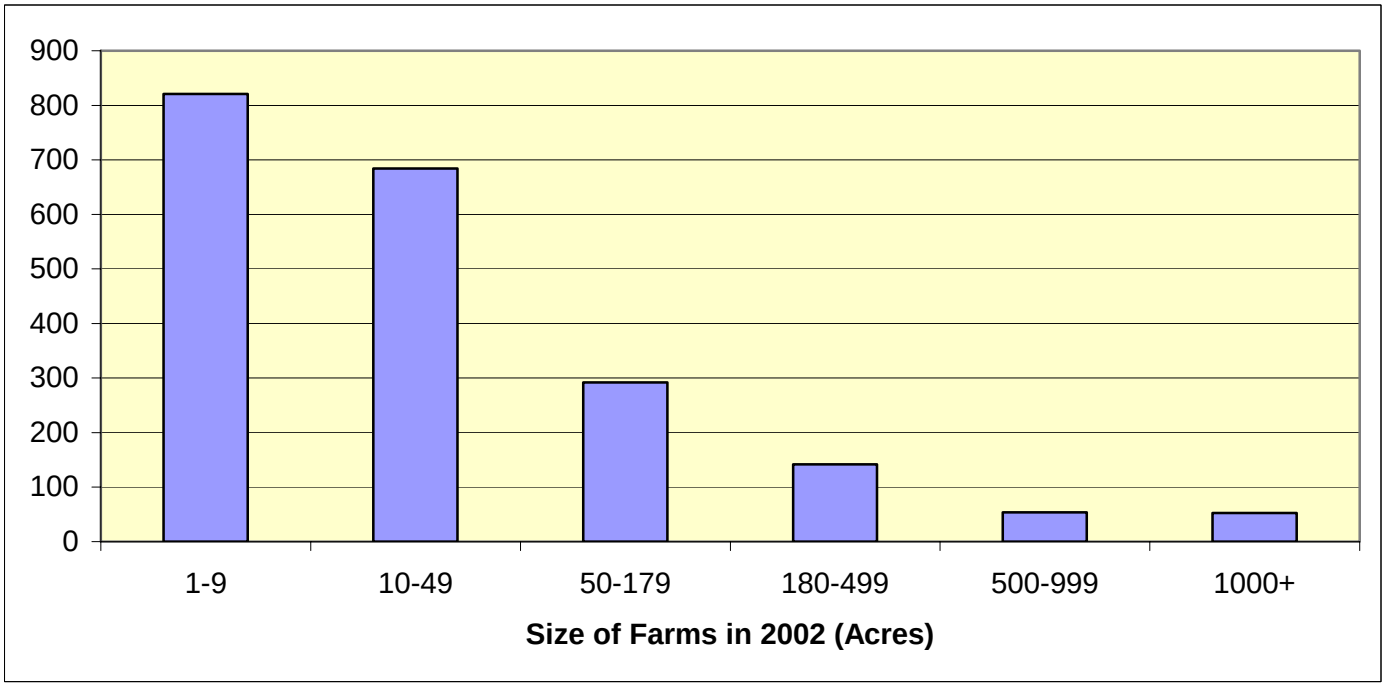
1) **Lowland Riparian** (riparian areas <5,500 ft elevation; principal vegetation: Fremont cottonwood and willow)
2) **Wetland** (marsh <5,500 ft elevation; principal vegetation: cattail, bulrush, and sedge)
3) **Mountain Riparian** (riparian areas >5,500 ft elevation; principal vegetation: narrowleaf cottonwood, willow, alder, birch and dogwood)
4) **Shrubsteppe** (shrubland at 2,500 - 11,500 ft elevation; principal vegetation: sagebrush and perennial grasses)
5) **Mountain Shrub** (deciduous shrubland at 3,300 - 9,800 ft elevation; principal vegetation: mountain mahogany, cliff rose, bitterbrush, serviceberry, etc.)
6) **Water - Lotic** (open water; streams and rivers)
7) **Wet Meadow** (water saturated meadows at 3,300 - 9,800 ft elevation; principal vegetation: sedges, rushes, grasses and forbs)
8) **Grassland** (perennial and annual grasslands or herbaceous dry meadows at 2,200 - 9,000 ft elevation)
9) **Water - Lentic** (open water; lakes and reservoirs)
10) **Aspen** (deciduous aspen forest at 5,600 - 10,500 ft elevation)

Resource Concerns – SOCIAL AND ECONOMIC

Categories	Specific Resource Concern / Issue	Crop	Hay	Pasture	Grazed Range	Grazed Forest	Pasture Native/Naturalized	Wildlife	Watershed Protection	Forest	Headquarters	Urban	Recreation	Water	Mined	Natural Area
Social and Economic	Non-Traditional Landowners and Tenants	X	X	X								X				
	Urban Encroachment on Agricultural Land	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Marketing of Resource Products	X														
	Innovation Needs															
	Non-Traditional Land Uses															
	Population Demographics, Changes and Trends											X				
	Special Considerations for Land Mangement (High State and Federal Percentage)															
	Active Resource Groups (CRMs, etc)								X							
	Full Time vs Part Time Agricultural Communities	X	X	X	X	X										
	Size of Operating Units	X	X	X	X	X										
	Land Removed from Production through Easments															
	Land Removed from Production through USDA Programs															
Other																

Census and Social Data





Number of Farms: 2,046

Number of Operators:

- Full-Time Operators: 906
- Part-Time Operators: 1,140

Public Survey/Questionnaire Results:

Resource Inventory – Utah County 2005

3 = Percent of respondents stating that the Resource Concern should be addressed immediately

2 = Percent of respondents stating that the Resource Concern should be addressed in the future

1 = Percent of respondents stating that the Resource Concern is a minor concern or not a concern

0 = Percent of respondents having no thought or opinion

Resource Concern	3	2	1	0
Soil Erosion on land or along stream channels	42	50	0	8
Soil Condition due to compaction or other changes	12	50	25	12
Soil contamination due to salts, chemicals or nutrients	29	29	29	12
Adequate water supply for desired uses	62	33	0	4
Available water is clean enough for desired uses	62	29	8	0
Groundwater quality and quantity	62	29	8	0
Storm runoff or flooding	46	37	8	8
Air Quality, including blowing dust, odors and other pollutants	12	50	33	4
Plant health, production and adequate quantities	58	25	8	8
Presence of invasive plants including noxious weeds	71	29	0	0
Wildfire hazard	50	33	17	0
Adequate food, water and cover available for livestock	12	29	50	8
Adequate food, water and cover available for wildlife	42	25	29	4
Wildlife species of special concern, including threatened & endangered	37	29	33	0
Loss of open space or agricultural lands	62	29	8	0
Urban/suburban growth	67	12		0
Adequate energy sources available	21	54	17	8
Recreation opportunities	37	33	25	4
Adequate support of historic/prehistoric resources	12	42	42	4
Adequate marketing for agricultural products	12	37	42	8

Demographics of Responders

Gender: 29% Male
71% Female

Ethnicity: 0% Hispanic, 0% Native American, 82% Caucasian, 0% Asian, 0% African American, 18% Other.

Age: 6% 18–24, 25% 25-38, 31% 39-50, 38% 51-65, 6% 65+

Top 5 Concerns (Immediate, Future, and Minor)

Immediate
1- Presence of invasive plants including noxious weeds
2- Urban/suburban growth
3- Adequate water supply for desired uses
Available water is clean enough for desired uses
Groundwater quality and quantity
Loss of open space or agricultural lands
Future
1- Adequate energy sources available
2- Soil Erosion on land or along stream channels
Soil Condition due to compaction or other changes
Air Quality, including blowing dust, odors and other pollutants
5- Adequate support of historic/prehistoric resources
Minor
1- Adequate food, water and cover available for livestock
2- Adequate marketing for agricultural products
3- Air Quality, including blowing dust, odors and other pollutants
Wildlife species of special concern, including threatened & endangered

Footnotes / Bibliography

1. General information about Utah County obtained from the Utah County 2005 Atlas and the official Utah County website: http://www.co.utah.ut.us/

2. Location and land ownership maps made using GIS shapefiles from the Automated Geographical Reference Center (AGRC), a Utah State Division of Information Technology. Website: http://agrc.utah.gov/

3. Land Use/Land Cover layer developed by the Utah Department of Water Resources. A polygon coverage containing water-related land-use for all 2003 agricultural areas of the state of Utah. Compiled from initial USGS 7.5 minute Digital Raster Graphic waterbodies, individual farming fields and associated areas are digitized from Digital Orthophotos, then surveyed for their land use, crop type, irrigation method, and associated attributes.

4. Land Use/Land Cover acreage values were obtained from the 2002 Census of Agriculture, the 2004 Utah Agriculture Statistics and Utah Dept. of Agriculture and Food Annual Report, the 2005 Utah County Atlas, and GIS Map data from AGRC.

5. Special considerations information was found in the 2002 Census of Agriculture, the 2005 Utah County Atlas, and the 2004 Agricultural Statistics and Utah Department of Agriculture and Food Annual Report and the 2002 Census of Agriculture.

6. Prime and Unique farmlands derived from SURGO Soils Survey UT607 and Soil Data Viewer. Definitions of Prime and Unique farmlands from U.S. Geological Survey, http://water.usgs.gov/eap/env_guide/farmland.html#HDR5

7. Land Capability Classes derived from SURGO Soils Survey UT607 and Soil Data Viewer.

8. Tons of Soil Loss by Water Erosion data gathered from National Resource Inventory (NRI) data. Estimates from the 1997 NRI Database (revised December 2000) replace all previous reports and estimates. Comparisons made using data published for the 1982, 1987, or 1992 NRI may produce erroneous results. This is due to changes in statistical estimation protocols, and because all data collected prior to 1997 were simultaneously reviewed (edited) as 1997 NRI data were collected. In addition, this December 2000 revision of the 1997 NRI data updates information released in December 1999 and corrects a computer error discovered in March 2000. For more information: http://www.nrcs.usda.gov/technical/NRI/

9. Precipitation data was developed by the Oregon Climate Service at Oregon State University using average monthly or annual precipitation from 1960 to 1990. Publication date: 1998. Data was downloaded from the Resource Data Gateway, http://dgateway-wb01.lighthouse.itc.nrcs.usda.gov/lighthouse

10. Stream Flow data from USGS Utah Water Science Center Surface-water data found at http://waterdata.usgs.gov/ut/nwis/sw.

11. Stream length data calculated using ArcMap and 100k stream data from AGRC and 303d waters from the Utah Department of Environmental Quality.

12. Watershed information from Natural Resources Conservation Service Provo Service Center Office staff.

13. AFO, CAFO, PCAFO numbers obtained from the 2004 Agricultural Statistics and Utah Department of Agriculture and Food Annual Report and the 2002 Census of Agriculture.

14. The 2003 noxious weed list was obtained from the State of Utah Department of Food and Agriculture. For more information contact Steve Burningham, 801-538-7181 or visit their website at http://ag.utah.gov/plantind/noxious_weeds.html

15. Wildlife information derived from the Utah Division of Wildlife Resources' Comprehensive Wildlife Conservation Strategy (CWCS) (http://wildlife.utah.gov/cwcs/) and from the Utah Conservation Data Center (http://dwrcdc.nr.utah.gov/ucdc/).

16. County population data from the U.S. Census Bureau, Utah Quick Facts, http://quickfacts.census.gov/qfd/states/49000.html

17. Farm information obtained from the National Agricultural Statistics Service, 2002 Census of Agriculture. http://www.nass.usda.gov/census/census02/volume1/index2.htm and http://www.nass.usda.gov/census/census02/profiles/ut/cp49049.PDF